<u>CLAIMS</u>

What is claimed is:

1   1.   A method comprising:

2   performing an encoding transformation on a set of data representing a video frame

3   as frame-based data and as field-based data to generate arrays of frame-based data and

4   arrays of field-based data;

5   selecting either the arrays of frame-based data or field-based data based, at least in

6   part, on the number of non-zero coefficients in the frame-based data and the field-based

7   data; and

8   converting an ordering of the arrays of selected data.

1   2.   The method of claim 1 wherein the encoding transformation is a discrete

2   cosine transform (DCT) operation.

1   3.   The method of claim 2 wherein the encoding transformation further

2   comprises quantization of results of the DCT operation.

1   4.   The method of claim 1 wherein selecting either the arrays of frame-based

2   data or field-based data based, at least in part, on the number of non-zero coefficients in

3   the frame-based data and the field-based data comprises:

4   comparing a macroblock of frame-based data to a macroblock of field-based data;

5   and

6   selecting the macroblock of data having the fewer number of non-zero

7   coefficients.

1   5.   The method of claim 1 wherein converting an ordering of the arrays of

2   frame-based data coefficients and of the arrays of field-based data coefficients comprises

3   performing a zig-zag conversion wherein an 8x8 matrix having an original order of:

0	1	2	3	4	5	6	7
8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23
24	25	26	27	28	29	30	31
32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47
48	49	50	51	52	53	54	55
56	57	58	59	60	61	62	63

5   are converted to having a scanning order of:

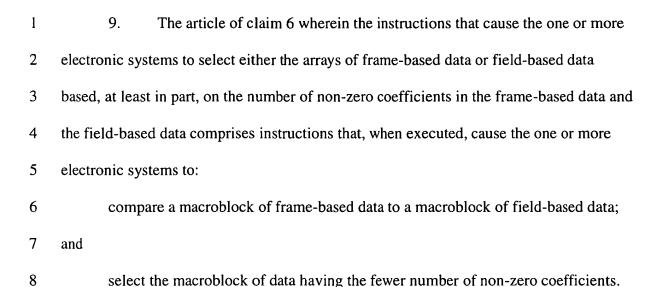| 0	1	5	6	14	15	27	28
2	4	7	13	16	26	29	42
3	8	12	17	25	30	41	43
9	11	18	24	31	40	44	53
10	19	23	32	39	45	52	54
20	22	33	38	46	51	55	60
21	34	37	47	50	56	59	61
35	36	48	49	57	58	62	63

1   6.   An article of manufacture comprising electronically-accessible medium to

2   provide instructions that, when executed, by one or more processors, cause one or more

3   electronic systems to:

4   perform an encoding transformation on a set of data representing a video frame as

5   frame-based data and as field-based data to generate arrays of frame-based data and

6   arrays of field-based data;

7   select either the arrays of frame-based data or field-based data based, at least in

8   part, on the number of non-zero coefficients in the frame-based data and the field-based

9   data; and

10   convert an ordering of the arrays of selected data.

1   7.   The article of claim 6 wherein the instructions that cause the one or more

2   electronic systems to perform encoding transformation comprise instructions that, when

3   executed, cause the one or more electronic systems to perform a discrete cosine transform

4   (DCT) operation on the data representing the video frame.

1   8.   The article of claim 7 wherein the instructions that cause the one or more

2   electronic systems to perform encoding transformation further comprises instructions

3   that, when executed, cause the one or more electronic systems to perform quantization of

4   results of the DCT operation.

1   9.   The article of claim 6 wherein the instructions that cause the one or more

2   electronic systems to select either the arrays of frame-based data or field-based data

3   based, at least in part, on the number of non-zero coefficients in the frame-based data and

4   the field-based data comprises instructions that, when executed, cause the one or more

5   electronic systems to:

6   compare a macroblock of frame-based data to a macroblock of field-based data;

7   and

8   select the macroblock of data having the fewer number of non-zero coefficients.

1   10.   The article of claim 6 wherein the instructions that cause the one or more

2   electronic systems to convert an ordering of the arrays of frame-based data coefficients

3   and of the arrays of field-based data coefficients comprises instructions that, when

4   executed, cause the one or more electronic systems to perform a zig-zag conversion

5   wherein an 8x8 matrix having an original order of:

0	1	2	3	4	5	6	7
8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23
24	25	26	27	28	29	30	31
32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47
48	49	50	51	52	53	54	55
56	57	58	59	60	61	62	63

6

7   are converted to having a scanning order of:

0	1	5	6	14	15	27	28
2	4	7	13	16	26	29	42
3	8	12	17	25	30	41	43
9	11	18	24	31	40	44	53
10	19	23	32	39	45	52	54
20	22	33	38	46	51	55	60
21	34	37	47	50	56	59	61
35	36	48	49	57	58	62	63

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1   11.   An apparatus comprising:

2   means for performing an encoding transformation on a set of data representing a

3   video frame as frame-based data and as field-based data to generate arrays of frame-

4   based data and arrays of field-based data;

5   means for selecting either the arrays of frame-based data or field-based data

6   based, at least in part, on the number of non-zero coefficients in the frame-based data and

7   the field-based data; and

8   means for converting an ordering of the arrays of selected data.

1   12.   The apparatus of claim 11 wherein the means for encoding transformation

2   performs a discrete cosine transform (DCT) operation.

1   13.   The apparatus of claim 12 wherein the means for encoding transformation

2   further comprises means for quantization of results of the DCT operation.

1   14.   The apparatus of claim 11 wherein the means for selecting either the

2   arrays of frame-based data or field-based data based, at least in part, on the number of

3   non-zero coefficients in the frame-based data and the field-based data comprises:

4   means for comparing a macroblock of frame-based data to a macroblock of field-
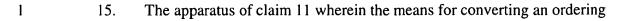
5   based data; and

6   means for selecting the macroblock of data having the fewer number of non-zero

7   coefficients.

1   15.   The apparatus of claim 11 wherein the means for converting an ordering

2   of the arrays of frame-based data coefficients and of the arrays of field-based data

3   coefficients comprises means for performing a zig -zag conversion wherein an 8x8 matrix

4   having an original order of:

5

0	1	2	3	4	5	6	7
8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23
24	25	26	27	28	29	30	31
32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47
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6   are converted to having a scanning order of:

7

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9	11	18	24	31	40	44	53
10	19	23	32	39	45	52	54
20	22	33	38	46	51	55	60
21	34	37	47	50	56	59	61
35	36	48	49	57	58	62	63